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ABSTRACT

The study examines the kinds of education and training that women have been receiving from institutions of higher education in the Cleveland area and particularly in Cuyahoga County. Records of degrees conferred in 1973-74 by program study were secured from nine colleges and universities in Cuyahoga County (Baldwin-Wallace, Case Western Reserve University, Cleveland State University, Cuyahoga Community College, Dyke, John Carrol University, Notre Dame, St. John College, and Ursuline College) with total enrollments of 52,855. The percentage distribution of degrees granted by field of study in Cuyahoga County and the number of degrees granted per 100,000 population are compared with national average figures (1970-71) from the Department of Health, Education, and Welfare. The survey data showed that most women receiving degrees in Cuyahoga County have been trained in traditionally "female" fields of specialization; few women have received degrees in traditionally "male" fields; and the absence of women in education and training programs leading to male occupations is true of all types of postsecondary education and training. The report further discusses possible factors accounting for the small number of women in traditionally "male" programs of study. The study concludes with a list of priority areas for further investigation. (BP)

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Women's Participation in Higher Education:

A Case Study of Degrees Conferred by Field of Study by Nine Colleges and Universities in the Cleveland Metropolitan Area, 1973-74

A Report to the

Cleveland Commission on Higher Education

by

Laverne C. Zell and Edric A. Weld, Jr.

December 23, 1974

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Abstract

With the enforcement of laws prohibiting sex discrimination, the demand for trained women should increase in many occupations hitherto dominated by males. This study examines the kinds of education and training that women have been receiving from institutions of higher education in the Cleveland area and particularly in Cuyahoga County.

Records of degrees conferred in 1973-74 by program of study were secured from nine colleges and universities in Cuyahoga County with total enrollments of 52,855. These are compared with the most recent published figures available from the Department of Health, Education, and Welfare covering 1970-71. The percentage distribution of degrees granted by field of study in Cuyahoga County and the numbers of degrees granted per 100,000 population are compared with the national average.

The survey shows that most women receiving degrees from institutions of higher education in Cuyahoga County have been trained in fields of specialization that have been traditionally dominated by women. Women have been far less likely than men to train for positions which might lead to promotion and higher-than-average salaries. Very few women have received degrees that would prepare them for careers in traditional 'male' fields like Engineering and Business Administration. Except at the professional and doctoral level, moreover, the number of degrees granted in Cuyahoga County to both men and women has been far below the national average relative to population.

The relative absence of women in education and training programs leading to 'male' occupations appears to be true not only in higher education but in all other types of post-secondary education and training as well. It appears that there is a potential mis-match between the community's post-secondary education system, the needs of the labor market, and the national goal of equal opportunity for all persons. Higher education in particular may prove to be a major bottleneck in the implementation of affirmative action programs.

The report goes on to list possible factors which may account for the small number of women in traditional 'male' programs of study. Better information is needed about factors which have actually impeded women from full participation in higher education, in order to design effective programs to increase educational opportunities for women. The study concludes, therefore, with a list of priority areas for further investigation.

Preface and Acknowledgements

This study was commissioned by Dr. W. J. Burns, Executive Director of the Cleveland Commission on Higher Education, which provided financial support for the project. It grows out of a survey of priority research needs made by the Clearinghouse for Research on Women and Employment.

The basic data comes from worksheets provided by the nine member institutions of the Cleveland Commission on Higher Education, and we are most grateful for the cooperation and assistance that we have received. The authors also wish to thank Ms. Eileen Nagcette for her assistance in preparing the manuscript.

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Introduction

The Problem

Although the U.S. Bureau of the Census reported that there were 309,721 women in the Cleveland SMSA in 1970, making up 37 percent of the total employed work force, the majority of working women were clustered in occupations which have traditionally been considered women's fields.

39 percent of all employed women were clerical and kindred workers.

16 percent of all employed women were service workers.

7 percent of all employed women were retail sales workers.

3 percent of all employed women were nurses.

2 percent of all employed women were private household workers.

At the same time, many occupations have long been held primarily by men. For example:

96 percent of all transport equipment operators were men.

96 percent of all craftsmen, foremen, and kindred workers were men.

91 percent of all laborers were men.

86 percent of all managers and administrators were men.

85 percent of all sales workers (excluding retail sales trade) were men.

71 percent of all professional, technical, and kindred workers (excluding teachers) were men.

Employed Persons 16 and Over, by Sex and Occupational Category, Cleveland SMSA, 1970

	Employed Persons					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	828,585	518,864	62.6%	309,721	37.4%	100.0%	100.0%
White Collar							
Professional, tech., and kindred	122,458	76,606	62.6%	45,852	37.4%	14.8%	14.8%
Teachers, elemen. and second.	24,393	7,384	30.3%	17,009	69.7%	1.4%	5.5%
Professional, all other	98,065	69,222	70.6%	28,843	29.4%	13.3%	9.3%
Managers and administrators	64,959	55,745	85.5%	9,214	14.2%	10.7%	3.0%
White Collar, Total	187,417	132,351	70.6%	55,066	29.4%	25.5%	17.8%
Other White Collar							
Sales workers	63,745	37,463	58.8%	26,282	41.2%	7.2%	8.5%
Retail trade	34,034	12,154	35.7%	21,880	64.3%	2.3%	7.1%
Sales workers, all other	29,711	25,309	85.2%	4,402	14.8%	4.9%	1.4%
Clerical and kindred	163,836	43,347	26.5%	120,489	73.5%	8.4%	38.9%
Other White Collar, Total	227,581	80,810	35.5%	146,771	64.5%	15.6%	47.4%
Blue Collar							
Craftsmen, foremen, and kindred	121,230	115,860	95.6%	5,370	4.4%	22.3%	1.7%
Operatives (except transport)	130,628	91,137	69.8%	39,491	30.2%	17.6%	12.8%
Transport equipment operatives	29,005	27,798	95.8%	1,207	4.2%	5.4%	.4%
Laborers (except farm)	33,888	30,902	91.2%	2,986	8.8%	6.0%	1.0%
Service workers	86,939	36,624	42.1%	50,315	57.9%	7.1%	16.2%
Private household workers	7,903	315	4.0%	7,588	96.0%	.1%	2.4%
All other (farm)	3,994	3,067	76.8%	927	23.2%	.6%	.3%
Blue Collar, Total	413,587	305,703	73.9%	107,884	26.1%	58.9%	34.8%

Source: General Social and Economic Characteristics, Ohio (PC1-C37), U.S. Bureau of the Census, 1970.

Note: Columns may not add to totals due to rounding.

The enforcement of laws prohibiting sex discrimination in employment should increase the demand for women in a variety of occupations which had been hitherto reserved for males. If equal opportunity laws and affirmative action programs effectively change employer hiring practices, the result could well be substantial increases in the demand for females in fields like accounting, business management, and engineering.

Many of these traditionally male occupations require specific kinds of education and training at the college and university level. For example, engineers need degrees in engineering, not in fine arts or elementary education. Unless trained personnel in such fields are available, affirmative action programs will be difficult to implement. Higher education may prove to be a major bottleneck in the career pipeline and a source of inequality rather than a means of preventing it.

The Focus of This Study

The purpose of this study, therefore, is to examine the kinds of education and training that women have been receiving from local colleges and universities in the Cleveland area, and particularly in Cuyahoga County which accounts for 84 percent of the population and most of the institutions of higher education in the SMSA.

The authors originally intended to survey all enrollments at local colleges and universities for 1974-75, by programs of study, sex, and race. It was found, however, that some

institutions do not keep records of enrollments by program of study, and this method of investigation had to be dropped.

All institutions of higher education do keep records of degrees conferred by sex and program of study and report these figures annually to the U.S. Department of Health, Education, and Welfare. The authors therefore decided to use degrees conferred as a measure of educational participation. (Unfortunately, this information is not presently available for race.)

1970-71 is the most recent year for which published information is available from HEW. Records of degrees conferred in 1973-74 were obtained from individual schools and tabulated by the authors. Degrees conferred per capita were caluclated with population data from the 1970 decennial census.

We shall attempt to answer the following specific questions in the body of this report:

> How many women received degrees from institutions of higher education located in Cuyahoga County in 1973-74, and in which fields of study were these degrees granted?
>
> To what extent have women been receiving training in traditional 'male' fields (e.g., Business, Engineering), as opposed to traditional 'female' fields (e.g., Education, Social Services)?

Have significant changes occurred during the last three years (1970-71 to 1973-74) in the kinds of training women received?

How do the numbers of degrees granted locally compare with the pattern elsewhere in the nation, in terms of the percentage share of degrees granted to women and the numbers of degrees granted per 100,000 persons in the population?

Institutions Surveyed

Nine institutions of higher education in Cuyahoga County participated in this study, all members of the Cleveland Commission on Higher Education.

Participating Institutions

Name	1973-74 Enrollment	Affiliation or Control
Baldwin-Wallace*	2,862	United Methodist
Case Western Reserve University*	9,068	Independent
The Cleveland State University	14,712	State
Cuyahoga Community College	19,933	Local
Dyke	779	Independent
John Carroll University*	3,785	Roman Catholic
Notre Dame	537	Roman Catholic
St. John College	754	Roman Catholic
Ursuline	425	Roman Catholic
Total	52,855	

Three of these institutions (indicated with an asterisk) enroll substantial numbers of non-resident students. On the other hand,

significant numbers of local residents attend schools outside the county. Figures for degrees granted by local institutions, therefore, provide only a rough approximation of the number of Cuyahoga County residents who received degrees in the years under study.

Four institutions in Cuyahoga County offering specialized programs in a single area of study were not included in this survey. These are The Cleveland Institute of Art, The Cleveland Institute of Music, The Ohio College of Podiatric Medicine, and St. Mary Seminary, with a combined 1973-74 enrollment of 1,698 students. The exclusion of these specialized institutions from the population surveyed does not appear to affect the general conclusions reached in this study.

Degrees Conferred

Associate Level

1973-74

Of the 1,856 associate degrees awarded in Cuyahoga County in 1973-74, women received 812 or 44 percent of the total.

The first noticeable difference between men and women at the associate level was that a much higher percent of women received degrees in occupational programs. Roughly 2 out of every 3 degrees received by women (64 percent vs. 43 percent for men) were in occupational programs. In contrast, about 3 out of every 5 degrees received by men (57 percent vs. 36 percent for women) were in Arts and Sciences programs. Arts and Sciences degrees tend to be applicable toward bachelor's degrees, while occupational degrees tend to be terminal, intended for certification in a specific occupation. Men were therefore more likely than women to receive associate degrees that could be applied toward bachelor's degrees.

Looking at specific occupational programs, we see that every individual occupational program was segregated or stereotyped by sex, with at least two-thirds of the graduates in each program being of the same sex. In nearly half of these programs, the percent of same-sex graduates was above 90 percent.

> Men received more than 90 percent of the degrees awarded in Business Management, Surgical Assisting, Physician's Clinical Assisting, Mechanical and Engineering Technologies, and Law Enforcement Technology.
>
> Women received more than 90 percent of the degrees awarded in Secretarial Technology, Medical Office Assisting, Dental Hygiene, Nursing, and Medical Records Technology.

Associate Degrees Conferred, Cuyahoga County, 1973-74

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	1,856	1,044	56.3%	812	43.7%	100.0%	100.0%
Arts & Sciences, General Programs	884	591	66.9%	293	33.1%	56.6%	36.1%
Occupational Curriculums	972	453	46.6%	519	53.4%	43.4%	63.9%
Business & Commerce	265	151	57.0%	114	43.0%	14.5%	14.0%
Secretarial Tech./ Office Administration	77	3	3.9%	74	96.1%	.3%	9.1%
Accounting Tech.	53	37	69.8%	16	30.2%	3.5%	2.0%
Business Management	62	56	90.3%	6	9.7%	5.4%	.7%
All other	73	55	75.3%	18	24.7%	5.3%	2.2%
Data Processing	46	34	73.9%	12	26.1%	3.3%	1.5%
Health Services	407	107	26.3%	300	73.7%	10.2%	36.9%
Medical Office Asst'g.	25	0	0.0%	25	100.0%	0.0%	3.1%
Dental Hygiene	42	1	2.4%	41	97.6%	.1%	5.0%
Nursing	146	10	6.8%	136	93.2%	1.0%	16.7%
Medical Records Tech.	24	2	8.3%	22	91.7%	.2%	2.7%
Physical Therapy; Occupational Therapy	46	10	21.7%	36	78.3%	1.0%	4.4%
Respiration Therapy	35	24	68.6%	11	31.4%	2.3%	1.4%
Surgical Assisting	21	20	95.2%	1	4.8%	1.9%	.1%
Physician's Clinical Assistant	31	30	96.8%	1	3.2%	2.9%	.1%
All other	37	10	27.0%	27	73.0%	1.0%	3.3%
Mechanical/Engineering	107	105	98.1%	2	1.9%	10.1%	.2%
Natural Science Tech. (Dietary Tech.)	20	0	0.0%	20	100.0%	0.0%	2.5%
Public Service Tech.	127	56	44.1%	71	55.9%	5.4%	8.7%
Library Technologies	19	2	10.5%	17	89.5%	.2%	2.1%
Child Care; Early Childhood Education	59	10	16.9%	49	83.1%	1.0%	6.0%
Law Enforcement Tech.	44	41	93.2%	3	6.8%	3.9%	.4%
All other	5	3	60.0%	2	40.0%	.3%	.2%

Note: Columns may not add to totals due to rounding.

Prepared by L. Zell, Clearinghouse for Research on Women and Employment, Institute of Urban Studies, Cleveland State University.

Note that most of the degrees in the predominately male programs lead to occupations where promotion is possible. In contrast, the degrees in predominately female programs often lead to dead-end jobs where promotion is not only unlikely but nearly impossible (a dental hygienist can not be promoted to dentist).

Nine out of every 10 occupational degrees awarded to women (or 89 percent) were in Secretarial Technologies, Health Services, Dietary Technologies, Library Technology, and Child Care Technology. These same five programs accounted for less than 3 out of every 10 occupational degrees awarded to men (or 27 percent). It might be noted once again that these programs, which accounted for most of the occupational degrees received by women, often lead to careers in which promotion would be unlikely.

Of the 519 degrees awarded to women in occupational programs, 300, or 58 percent, were in Health Services curriculums. Health Services degrees accounted for more than one-third (37 percent) of all associate degrees awarded to women (vs. 10 percent of all degrees awarded to men). Nearly half (45 percent) of all Health Services degrees awarded to women were in Nursing, accounting for 17 percent of all associate degrees awarded to women (vs. 1 percent of all associate degrees awarded to men).

Of the Health Services degrees awarded to men, 69 percent were in Respiration Therapy, Surgical Assisting, and Physician's Clinical Assisting (all higher paying and predominately male occupations), while only 4 percent of the Health Service degrees awarded

to women were in these three fields.

Note that the associate degrees received by men were more evenly distributed among the various occupational programs. No one field accounted for more than 15 percent of all associate degrees awarded to men.

Note that there were few women in Business Management, Data Processing, and Mechanical/Engineering Technologies. These three fields combined accounted for only 2 percent of all associate degrees awarded to women (compared with 29 percent of all associate degrees awarded to men). All three areas of training lead to opportunities for high-paying jobs, and we understand that qualified women in these three fields are in demand.

1970-71 vs. 1973-74

While the actual number of associate degrees awarded to women rose from 530 in 1970-71 to 812 in 1973-74, the percent of degrees awarded to women remained constant (44 percent).

The percent of degrees conferred in individual fields that were received by women increased in some cases and decreased in others, but the relative share of all degrees received by women accounted for by any given field did not change by more than 2 percent.

> In Data Processing, the percent of degrees awarded to women rose from 20 percent to 26 percent, but the actual number of degrees awarded to women increased by only two.

Associate Degrees Conferred, Cuyahoga County, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	1,212	682	56.3%	530	43.7%	100.0%	100.0%
Arts & Sciences, General Programs	632	435	68.8%	197	31.2%	63.8%	37.2%
Occupational Curriculums	580	247	42.6%	333	57.4%	36.2%	62.8%
Business and Commerce	171	86	50.3%	85	49.7%	12.6%	16.0%
Data Processing Tech.	49	39	79.6%	10	20.4%	5.7%	1.9%
Health Services, Paramedical	217	17	7.8%	200	92.2%	2.5%	37.7%
Nursing	146	9	6.2%	137	93.8%	1.3%	25.8%
Mechanical, Engineering Tech.	64	64	100.0%	0	0.0%	9.4%	0.0%
Public Service Tech.	79	41	51.9%	38	48.1%	6.0%	7.2%

Note: Columns may not add to totals due to rounding.

Source: Associate Degrees and Other Formal Awards Below the Baccalaureate, 1970-71, U.S. Department of Health, Education, and Welfare.

In Health Services, the number of degrees awarded to women increased by one hundred (from 200 to 300), but the relative importance of the area remained unchanged. More men had entered Health Services (primarily in Respiration Therapy, Surgical Assisting, and Physician's Clinical Assisting), causing the percent of degrees received by women to drop from 92 percent to 74 percent. The relative importance of Health Services degrees as a percent of all degrees granted to women changed by less than one percentage point (from 38% to 37%).

In summary, although the number of women being educated at the associate level increased from 1970-71 to 1973-74, there were no real changes in the kinds of degrees awarded to women.

National Comparison

There are two questions to be addressed in comparing degrees received by women locally and nationally. First is the proportionate share of degrees conferred that were received by women. Second is the actual number of degrees conferred to women relative to population.

Associate Degrees Conferred, United States, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	253,635	144,557	57.0%	109,078	43.0%	100.0%	100.0%
Arts & Sciences, General Programs	145,473	82,579	56.8%	62,894	43.2%	57.1%	57.7%
Occupational Curriculums	108,162	61,978	57.3%	46,184	42.7%	42.9%	42.3%
Business & Commerce	39,476	20,416	51.7%	19,060	48.3%	14.1%	17.5%
Data Processing	6,611	4,471	67.6%	2,140	32.4%	3.1%	2.0%
Health Services	21,525	2,172	10.1%	19,353	89.9%	1.5%	17.7%
Nursing	6,123	354	5.8%	5,769	94.2%	.2%	5.3%
Mechanical, Engineering	24,371	24,015	98.5%	356	1.5%	16.6%	.3%
Public Service	10,404	6,420	61.7%	3,984	38.3%	4.4%	3.7%
Natural Science	5,775	4,484	77.6%	1,291	22.4%	3.1%	1.2%

Note: Columns may not add to to totals due to rounding.

Source: Associate Degrees and Other Formal Awards Below the Baccalaureate, 1970-71, U.S. Department of Health, Education, and Welfare.

Percent of Associate Degrees Awarded to Women,
Cuyahoga County vs. United States, 1970-71

	United States			Cuyahoga County			
	Total Degrees Awarded	Degrees Awarded To Women	Percent	Total Degrees Awarded	Degrees Awarded To Women	Percent	Percent Diff.
Arts and Sciences, General Programs	145,473	62,894	43.2%	632	197	31.2%	-12.0%
Occupational Curriculums	108,162	46,184	42.7%	580	333	57.4%	+14.7%
Business and Commerce	39,476	19,060	48.3%	171	85	49.7%	+ 1.4%
Data Process.	6,611	2,140	32.4%	49	10	20.4%	-12.0%
Health Services	21,525	19,353	89.9%	217	200	92.2%	+ 2.3%
Nursing	6,123	5,769	94.2%	146	137	93.8%	- .4%
Mechanical/ Engineering	24,371	356	1.5%	64	0	0.0%	- 1.5%
Public Service	10,404	3,984	38.3%	79	38	48.1%	+ 9.8%
Total	253,635	109,078	43.0%	1,212	530	43.7%	+ .7%

Percent Distribution

	U.S.	Cuy. Co.	Difference
Arts & Sciences, Gen'l.	57.7%	37.2%	-20.5%
Occupational Curriculums	42.3%	62.8%	+20.5%
Business & Commerce	17.5%	16.0%	- 1.5%
Data Processing	2.0%	1.9%	- .1%
Health Services	17.7%	37.7%	+20.0%
Nursing	5.3%	16.7%	+11.4%
Mechanical/Engineering	.3%	.0%	- .3%
Public Services	3.7%	7.2%	+ 3.5%
Total, all associate degrees	100.0%	100.0%	-

Note: Columns may not add to totals due to rounding.

Source: Calculated from data in Associate Degrees and Other Formal Awards Below the Baccalaureate, 1970-71, U.S. Department of Health, Education, and Welfare.

The proportionate share of all associate degrees received by women was the same locally and nationally. Women received 44 percent of the associate degrees awarded in Cuyahoga County and 43 percent of those awarded nationally.

Degrees received by women in the Cleveland area, however, were more concentrated in occupational curriculums, and in particular, in Health Services programs. Sixty-three percent of all associate degrees received by women in Cuyahoga County were in occupational curriculums, compared with 42 percent nationally. This difference is caused by Health Services programs which accounted for 38 percent of all associate degrees received by women in Cuyahoga County, compared with 18 percent of all associate degrees received by women nationally.

Of the Health Services degrees received by women in Cuyahoga County, 69 percent were in Nursing programs, compared with only 30 percent nationally.

> Nursing alone accounted for 26 percent of all associate degrees received by women in Cuyahoga County, but only 5 percent of all degrees received by women nationally.

> This could be due to the fact that Cleveland is a medical center. It is also possible that more nursing programs in other parts of the country were sponsored by hospitals rather than colleges or resulted in certification other than a formal associate degree.

If we subtract the degrees received by women in Nursing from the total for occupational curriculums, we find that non-nursing occupational curriculums accounted for exactly the same share (37 percent) of all associate degrees received by women both locally and nationally.

Thus, the only significant difference from the national pattern in the kinds of degrees women received, was that women in Cuyahoga County received less Arts and Sciences degrees and were much more likely to have received degrees in Nursing. We now examine the actual numbers of associate degrees awarded to women on a per capita basis.

Associate Degrees Conferred per 100,000 Inhabitants, Cuyahoga County vs. United States, 1970-71

	United States			Cuyahoga County		
	Total	Men	Women	Total	Men	Women
Arts and Sciences	69.9	39.7	30.2	36.7	25.3	11.4
Occupational Curriculums	52.0	29.8	22.2	33.7	14.3	19.3
Nursing	2.9	.1	2.8	8.5	.5	8.0
All other	49.1	29.7	19.4	25.2	13.8	11.4
Total	122.0	69.5	52.4	70.4	39.6	30.8

Note: Columns may not add to totals due to rounding.

Source: Calculated from data in Associate Degrees and Other Formal Awards Below the Baccalaureate, 1970-71, U.S. Department of Health, Education, and Welfare.

In Cuyahoga County there were 30.8 degrees awarded to women for every 100,000 people. Nationally, there were 52.4 degrees awarded to women for every 100,000 people, or 70 percent more than in Cuyahoga County. If women in Cuyahoga County had received associate degrees at the national rate per capita, there would have been 902 degrees awarded to women in Cuyahoga County in 1970-71, or 372 more than were actually awarded.

It is important to note that far fewer people of either sex were being educated at the associate level in Cuyahoga County. There were 70.4 associate degrees conferred to both men and women for every 100,000 people in Cuyahoga County, compared with 122 per 100,000 nationally (or 73 percent more than in Cuyahoga County).

Women in Cuyahoga County received 11.4 degrees in Arts and Sciences per 100,000 people, compared with 30.2 degrees nationally. In Nursing programs, Cuyahoga County women received 8 degrees for every 100,000 people, compared with 2.8 degrees nationally. Subtracting Nursing degrees from the total, we find that women received 11.4 non-nursing occupational degrees for every 100,000 people in Cuyahoga County, compared with 19.4 degrees nationally.

To summarize, women in the nation as a whole received almost 3 times as many Arts and Sciences degrees and 70 percent more non-nursing occupational degrees than did local women. Only in Nursing programs did Cleveland outshine the nation, with women in Cuyahoga County receiving almost 3 times as many Nursing degrees as women in the nation as a whole.

Bachelor's Level

1973-74

Women received 1,699 bachelor's degrees or 40 percent of the 4,237 degrees awarded in 1973-74 in Cuyahoga County.

Just as at the associate level, many fields were predominately female while others were predominately male. Women received more than 70 percent of the degrees awarded in Home Economics, Health Professions, Education, Public Affairs and Services, and Fine and Applied Arts.

> These five fields accounted for 46 percent or nearly half of all bachelor's degrees received by women, compared with 7 percent or less than one-fourteenth of the bachelor's degrees awarded to men.
>
> Education alone accounted for more than one out of every four degrees awarded to women (27 percent).

In all the remaining fields which were not predominately female, men received 7 out of every 10 degrees conferred (72 percent).

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Home Economics	39	0	0.0%	39	100.0%	0.0%	2.3%
Health Professions	150.5	12.5	8.3%	138	91.7%	.5%	8.1%
Education	570.5	113.5	19.9%	457	80.1%	4.5%	26.9%
Public Affairs and Services (social work)	97	26	26.8%	71	73.2%	1.0%	4.2%
Fine & Applied Arts	104	31	29.8%	73	70.2%	1.2%	4.3%
Subtotal	961	183	19.0%	778	81.0%	7.2%	45.8%
All other fields	3,276.5	2,355	71.9%	921.5	28.1%	92.8%	54.2%
Total, all graduates	4,237.5	2,538	59.9%	1,699.5	40.1%	100.0%	100.0%

Bachelor's Degrees Conferred, Cuyahoga County, 1973-74

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	4,237.5	2,538	59.9%	1,699.5	40.1%	100.0%	100.0%
Architecture	1	1	100.0%	0	0.0%	-	0.0%
Area Studies	7.5	4	53.3%	3.5	46.7%	.2%	.2%
Biology	237	150	63.3%	87	36.7%	5.9%	5.1%
Business & Management	823	738.5	89.7%	84.5	10.3%	29.1%	5.1%
Communications	59	38	64.4%	21	35.6%	1.5%	1.2%
Computer & Information Sciences	57	49	85.0%	8	14.0%	1.9%	.4%
Education	570.5	113.5	19.9%	457	80.1%	4.5%	26.9%
Engineering	390	386	99.0%	4	1.0%	15.2%	.2%
Fine & Applied Arts	104	31	29.8%	73	70.2%	1.2%	4.3%
Foreign Languages	94.5	28.5	30.2%	66	69.8%	1.1%	3.9%
Health Professions	150.5	12.5	8.3%	138	91.7%	.5%	8.1%
Home Economics	39	0	0.0%	39	100.0%	0.0%	2.3%
Letters	326.5	141.5	43.3%	185	56.7%	5.6%	10.9%
Mathematics	105.5	57.5	54.5%	48	45.5%	2.3%	2.8%
Physical Sciences	200.3	166.3	83.0%	34	17.0%	6.6%	2.0%
Psychology	315.8	178.3	56.5%	137.5	43.5%	7.0%	8.1%
Public Services	97	26	26.8%	71	73.2%	1.0%	4.2%
Social Sciences	631.3	399.3	63.3%	232	36.7%	15.7%	13.7%
Interdisciplinary Studies	27	16	59.3%	11	40.7%	.6%	.6%
All other	1	1	100.0%	0	0.0%	-	0.0%

Note: Columns may not add to totals due to rounding.

Prepared by L. Zell, Clearinghouse for Research on Women and Employment, Institute of Urban Studies, Cleveland State University.

Men received more than 70 percent of the degrees awarded in Engineering, Business and Management, Computer and Information Sciences, and Physical Sciences.

> These four fields accounted for 53 percent or more than half of all bachelor's degrees awarded to men, but less than 8 percent of the degrees awarded to women.
>
> Business and Management alone accounted for 29 percent of all bachelor's degrees awarded to men (vs. 5 percent of all degrees awarded to women).

It is significant that less than one out of every thirteen degrees in these four vocationally important fields went to women.

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Engineering	390	386	99.0%	4	1.0%	15.2%	.2%
Business and Management	823	738.5	89.7%	84.5	10.3%	29.1%	5.1%
Computer and Information Sciences	57	49	86.0%	8	14.0%	1.9%	.4%
Physical Sciences	200.3	166.3	83.0%	34	17.0%	6.6%	2.0%
Subtotal	1,470.3	1,339.8	91.1%	130.5	8.9%	52.8%	7.7%
All other fields	2,767.2	1,198.2	43.3%	1,569	56.7%	47.2%	92.3%
Total, all graduates	4,237.5	2,538	59.9%	1,699.5	40.1%	100.0%	100.0%

In summary, half of all bachelor's degrees awarded to women (and less than one out of fourteen degrees awarded to men) were in fields that either tend to be vocationally irrelevant (Home Economics, Fine and Applied Arts) or are connected with traditionally low-paying "female" occupations (Education, Health Professions, Public Affairs and Services).

In contrast, half of all bachelor's degrees awarded to men (but only one out of thirteen degrees awarded to women) were in four vocationally relevant fields, leading to jobs in high paying traditional "male" occupations.

1970-71 vs. 1973-74

The actual number of degrees awarded to women in Cuyahoga County rose by 73, while the total number of bachelor's degrees conferred rose by only 6. As a consequence, the share of bachelor's degrees awarded to women rose from 38 percent of the total in 1970-71 to 40 percent in 1973-74.

The number of degrees received by women increased in some fields and decreased in others, but the percent share of degrees received by women accounted for by any one field did not change by more than 4 percent.

> In Education the number of degrees received by women decreased from 504 to 457 while the number of degrees awarded to men increased from 60 to 113. As a result, the percent of Education degrees awarded to women decreased from 89 percent to 80 percent.
>
> The relative importance of degrees in Education for women decreased slightly (27 percent of all degrees awarded to women were in Education in 1973-74, compared with 31 percent in 1970-71).
>
> At the same time, the overall share of all bachelor's degrees received by women in two other traditional "female" fields (Public Affairs and Services and Health Professions) increased by 5 percent.

In terms of this study, no significant change occurred, since the decrease in the concentration of women in one traditional field was matched by increases in the concentration of women in other traditional fields.

The number of degrees received by women increased in the Physical Sciences (from 25 degrees in 1970-71 to 34 in 1973-74) and in Business and Management (from 69 to 84 degrees). These changes did not result, however, in significant increases in the overall share of all bachelor's degrees awarded to women accounted for by these two fields.

Bachelor's Degrees Conferred, Cuyahoga County, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	4,229	2,603	61.6%	1,626	38.4%	100.0%	100.0%
Architecture	17	16	94.1%	1	5.9%	.6%	.1%
Area Studies	4	2	50.0%	2	50.0%	.1%	.1%
Biological Sciences	168	107	63.7%	61	36.3%	4.1%	3.8%
Business and Management	962	893	92.8%	69	7.2%	34.3%	4.2%
Communication	9	8	88.9%	1	11.1%	.3%	.1%
Education	564	60	10.6%	504	89.4%	2.3%	31.0%
Engineering	381	379	99.5%	2	.5%	14.6%	.1%
Fine and Applied Arts	62	9	14.5%	53	85.5%	.3%	3.3%
Foreign Languages	135	30	22.2%	105	77.8%	1.2%	6.5%
Health Professions	115	4	3.5%	111	96.5%	.2%	6.8%
Home Economics	25	0	0.0%	25	100.0%	0.0%	1.5%
Letters	402	177	44.0%	225	56.0%	6.8%	13.8%
Mathematics	143	90	62.9%	53	37.1%	3.5%	3.3%
Physical Sciences	218	193	88.5%	25	11.5%	7.4%	1.5%
Psychology	313	180	57.5%	133	42.5%	6.9%	8.2%
Public Affairs and Services	16	1	6.3%	15	93.7%	-	.9%
Social Sciences	670	433	64.6%	237	35.4%	16.6%	14.6%
Interdisciplinary Studies	25	21	84.0%	4	16.0%	.8%	.2%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

National Comparison

Proportionately, women received a smaller share of all bachelor's degrees locally in 1971-72 than they did nationally. Women received 38 percent of the bachelor's degrees awarded in Cuyahoga County, compared with 44 percent of all degrees awarded in the United States.

With the exception of Education, there were no major differences in the overall share of degrees accounted for by any one field.

> For example, women received 97 percent of all Health Professions degrees awarded in Cuyahoga County in 1971-72 compared with 77 percent of those awarded nationally.
>
> Nevertheless, Health Professions accounted for roughly the same share of degrees received by women locally and nationally. (Seven percent of all degrees received by women in Cuyahoga County vs. 5 percent nationally).

In Education, women received 89 percent of the degrees awarded in Cuyahoga County in 1971-72. Nationally, women received only 74 percent of the Education degrees conferred. The overall share of degrees accounted for by Education was also different but the situation was reversed. Education accounted for 31 percent of all degrees received by women locally, compared with 36 percent of all degrees received nationally. In other words, Education was a more exclusively female field in Cuyahoga County, but at the same time it accounted for a smaller share of all degrees received by women locally. Since Education has become overcrowded in terms of employment, it is unfortunate that in Cuyahoga County a higher percent of the degrees in this field went to women.

Bachelor's Degrees Conferred, United States, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	846,110	478,423	56.5%	367,687	43.5%	100.0%	100.0%
Architecture	5,578	4,911	88.0%	667	12.0%	1.0%	.2%
Area Studies	2,497	1,175	47.1%	1,322	52.9%	.2%	.4%
Biological Sciences	36,033	25,462	70.7%	10,571	29.3%	5.3%	2.9%
Business and Management	116,709	105,906	90.7%	10,803	9.3%	22.1%	2.9%
Communications	10,802	6,989	64.7%	3,813	35.3%	1.5%	1.0%
Computer and Info. Sciences	2,388	2,064	86.4%	324	13.6%	.4%	.1%
Education	177,638	45,402	25.6%	132,236	74.4%	9.5%	36.0%
Engineering	50,357	49,954	99.2%	403	.8%	10.4%	.1%
Fine and Applied Arts	30,447	12,278	40.3%	18,169	59.7%	2.6%	4.9%
Foreign Languages	20,433	5,148	25.2%	15,285	74.8%	1.1%	4.2%
Health Professions	25,484	5,804	22.8%	19,680	77.2%	1.2%	5.4%
Home Economics	11,271	301	2.7%	10,970	97.3%	.1%	3.0%
Letters	73,398	28,616	39.0%	44,782	61.0%	6.0%	12.2%
Mathematics	24,918	15,424	61.9%	9,494	38.1%	3.1%	2.6%
Physical Sciences	21,549	18,535	86.0%	3,014	14.0%	3.9%	.8%
Psychology	38,154	21,117	55.3%	17,037	44.7%	4.4%	4.6%
Public Affairs and Services	9,303	4,737	50.9%	4,566	49.1%	1.0%	1.2%
Social Sciences	156,698	98,780	63.0%	57,918	37.0%	20.7%	15.8%
Interdisciplinary Studies	14,084	9,967	70.8%	4,117	29.2%	2.1%	1.1%
All other	18,369	15,853	86.3%	2,516	13.7%	3.3%	.7%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

Bachelor's Degrees Awarded to Women, Selected Fields, Cuyahoga County vs. United States, 1970-71

	United States			Cuyahoga County			
	Total Degrees Awarded	Degrees Awarded To Women	Percent	Total Degrees Awarded	Degrees Awarded To Women	Percent	Percent Diff.
Business and Management	116,709	10,803	9.3%	962	69	7.2%	- 2.1%
Education	177,638	132,236	74.4%	564	504	89.4%	+15.0%
Engineering	50,357	403	.8%	381	2	.5%	- .3%
Health Profess.	25,484	19,680	77.2%	115	111	96.5%	+19.3%
Public Affairs and Services	9,303	4,566	49.1%	16	15	93.7%	+44.6%
Subtotal	379,491	167,688	44.2%	2,038	701	34.4%	- 9.8%
All other	466,619	199,999	42.9%	2,191	925	42.2%	- .7%
Total, all bachelor's degrees	846,110	367,687	43.5%	4,229	1,626	38.4%	- 5.1%

Percent Distribution

	U.S.	Cuy. Co.	Difference
Business and Management	2.9%	4.2%	+ 1.3%
Education	36.0%	31.0%	- 5.0%
Engineering	.1%	.1%	-
Health Professions	5.4%	6.8%	+ 1.4%
Public Affairs and Services	1.2%	.9%	- .3%
Subtotal	45.6%	43.1%	- 2.5%
All other programs	54.4%	56.9%	+ 2.5%
Total, all bachelor's degrees	100.0%	100.0%	-

Note: Columns may not add to totals due to rounding.

Source: Calculated from data in Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

We now shift focus to the actual number of Bachelor's degrees received by women relative to population. In Cuyahoga County, women received 94.5 bachelor's degrees per 100,000 people. Nationally, women received 176.8 degrees per 100,000 people, or 88 percent more than were received by women in Cuyahoga County. If women in Cuyahoga County had been educated at the national rate, there would have been 3,043 degrees awarded to women in 1970-71, 1,417 more than were actually awarded.

Bachelor's Degrees Awarded per 100,000 Inhabitants, 1970-71

	Total	Men	Women
Cuyahoga County	245.7	151.2	94.5
United States	406.8	230.0	176.8

Men and women combined received 245.7 bachelor's degrees per 100,000 persons in Cuyahoga County. Nationally, there were 406.8 degrees awarded for every 100,000 people, two-thirds more than were awarded in Cuyahoga County.[1] Clearly, the proportion of the population educated at the bachelor's level in Cuyahoga County was far below the national average, and women received less of what was available than did women nationally.

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1. Two other schools in Cuyahoga County that awarded bachelor's degrees in 1970-71 were not included in this study (Cleveland Institute of Art and the Cleveland Institute of Music). Ninety-two bachelor's degrees were awarded by these institutions, raising the number of degrees awarded per 100,000 people in Cuyahoga County from 245.7 to 251.5 a figure that is still far smaller than the average of 406.8 degrees per 100,000 achieved nationally. Of the 92 additional degrees, 44 were awarded to women, raising the per capita figure for women in Cuyahoga County to 101.3 degrees per 100,000 people (still far less than the national figure of 176.8 per 100,000).

Master's Level

1973-74

Of the 1,481 master's degrees conferred in Cuyahoga County in 1973-74, women recieved 699 or 47 percent, nearly half of the total.

Three fields (Education, Library Science, and Public Affairs and Services) accounted for two-thirds of all degrees received by women (67 percent compared with 33 percent of all degrees received by men). More than 6 out of every 10 degrees awarded in these three fields were received by women.

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Education	478	182	38.1%	296	61.9%	23.3%	42.3%
Library Science	117	32	27.4%	85	72.6%	4.1%	12.2%
Public Affairs & Services	130	45	34.6%	85	65.4%	5.8%	12.2%
Subtotal	725	259	35.7%	466	64.3%	33.1%	66.7%
All other categories	756	523	69.2%	233	30.8%	66.9%	33.3%
Total, all graduates	1,481	782	52.8%	699	47.2%	100.0%	100.0%

Education alone accounted for 42 percent or nearly half of all degrees awarded to women (vs. 23 percent of all degrees awarded to men). It might be noted that Education was less exclusively female at the master's level than it was at the bachelor's. Sixty-two percent of all master's in Education were received by women, compared with 80 percent of all bachelor's in Education. Unfortunately, this indicates that women in Education were less likely than men to receive higher degrees that would increase their chances for promotion.

Master's Degrees Conferred, Cuyahoga County, 1973-74

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	1,481	782	52.8%	699	47.2%	100.0%	100.0%
Area Studies	6	3	50.0%	3	50.0%	.4%	.4%
Biology	53	18	34.0%	35	66.0%	2.3%	5.0%
Business & Management	192	180	93.8%	12	6.2%	23.0%	1.7%
Computer & Information Sciences	21	20	95.2%	1	4.8%	2.6%	.1%
Education	478	182	38.1%	296	61.9%	23.3%	42.3%
Engineering	98	94	95.9%	4	4.1%	12.0%	.6%
Fine & Applied Arts	15	5	33.3%	10	66.7%	.6%	1.4%
Foreign Languages	14	2	14.3%	12	85.7%	.3%	1.7%
Health Professions	56	8	14.3%	48	85.7%	1.0%	6.9%
Law	3	3	100.0%	0	0.0%	.4%	0.0%
Letters	42	16	38.1%	26	61.9%	2.0%	3.7%
Library Science	117	32	27.4%	85	72.6%	4.1%	12.2%
Mathematics	18	13	72.2%	5	27.8%	1.7%	.7%
Physical Sciences	86	71	82.6%	15	17.4%	9.1%	2.1%
Psychology	32	16	50.0%	16	50.0%	2.0%	2.3%
Public Affairs & Services	130	45	34.6%	85	65.4%	5.8%	12.2%
Social Sciences	120	74	61.7%	46	38.3%	9.5%	6.6%

Note: Columns may not add to totals due to rounding.

Prepared by L. Zell, Clearinghouse for Research on Women and Employment, Institute of Urban Studies, Cleveland State University.

Three fields (Business Management, Engineering, Physical Sciences) accounted for 44 percent of all master's degrees received by men (vs. 4 percent of all master's degrees received by women). Only one out of every twelve degrees awarded in these three fields was received by a woman.

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Business & Management	192	180	93.8%	12	6.2%	23.0%	1.7%
Engineering	98	94	95.9%	4	4.1%	12.0%	.6%
Physical Sciences	86	71	82.6%	15	17.4%	9.1%	2.1%
Subtotal	376	345	91.8%	31	8.2%	44.1%	4.4%
All other categories	1,105	437	39.5%	668	60.4%	55.9%	95.6%
Total, all graduates	1,481	782	52.8%	699	47.2%	100.0%	100.0%

In summary, women were very nearly on equal footing with men in terms of total degrees conferred, receiving 47 percent of all master's degrees awarded. However, in terms of the kinds of degrees received, women were concentrated to a great extent in a few traditional 'female' fields and were nearly excluded from other traditional 'male' fields.

1970-71 vs. 1973-74

The total number of master's degrees received by women increased from 593 to 699, raising the percent of master's degrees received by women from 45 percent to 47 percent.

Most of the additional degrees awarded to women were in the field of Education. The number of Education degrees awarded to women rose by 129, while the total number of master's degrees awarded to women increased by only 106. In other words, the number of degrees received by women in all fields excluding Education actually dropped.

As a result of this enormous increase in the number of women in Education, the percent of Education degrees received by women increased from 54 percent to 62 percent. The overall share of degrees accounted for by Education also increased. In 1970-71, Education accounted for 28 percent of all degrees received by women, compared with 42 percent of all degrees received by women in 1973-74.

It could be that female teachers in increasing numbers are trying to upgrade their skills and salaries with master's degrees. The fact remains, however, that the field which experienced the greatest increase in women is a field that was already dominated by women and already overcrowded in terms of employment.

It should be noted that the percent of degrees awarded to women in another traditional 'female' field, Library Science, decreased from 83 percent to 73 percent. The overall share of degrees accounted for by Library Science decreased also, but not

Master's Degrees Conferred, Cuyahoga County, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	1,316	723	54.9%	593	45.1%	100.0%	100.0%
Area Studies	6	1	16.7%	5	83.3%	.1%	.8%
Biological Studies	58	7	12.1%	51	87.9%	1.0%	8.6%
Nutrition	41	0	0.0%	41	100.0%	0.0%	6.9%
Business and Management	167	165	98.8%	2	1.2%	22.8%	.3%
Computer and Information Sciences	8	8	100.0%	0	0.0%	1.1%	0.0%
Education	309	142	46.0%	167	54.0%	19.6%	28.2%
Engineering	110	109	99.1%	1	.9%	15.2%	.2%
Fine and Applied Arts	26	9	34.6%	17	65.4%	1.2%	2.9%
Foreign Languages	27	7	25.9%	20	74.1%	1.0%	3.4%
Health Professions	64	16	25.0%	48	75.0%	2.2%	8.1%
Law	2	2	100.0%	0	0.0%	.3%	0.0%
Letters	70	25	35.7%	45	64.3%	3.5%	7.6%
Library Science	121	21	17.4%	100	82.6%	2.9%	16.9%
Mathematics	45	35	77.8%	10	22.2%	4.8%	1.7%
Physical Sciences	83	70	84.3%	13	15.7%	9.7%	2.2%
Psychology	34	20	58.8%	14	41.2%	2.8%	2.4%
Public Affairs and Services	102	40	39.2%	62	60.8%	5.5%	10.5%
Social Sciences	84	46	54.8%	38	45.2%	6.4%	6.4%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

as dramatically (17 percent of all degrees awarded to women in 1970-71 vs. 12 percent in 1973-74).

Note too that the number of degrees awarded to women in Business Management increased from 2 to 12, but that this did not significantly affect the overall share of degrees accounted for by Business.[1]

National Comparison

Women in Cuyahoga County received a higher percentage of all master's degrees conferred (45 percent of the total vs. 40 percent nationally).

Two traditional 'female' fields were more exclusively female in Cuyahoga County.

> In Health Professions, 75 percent of all degrees awarded went to women, compared with 55 percent nationally.
>
> In Public Affairs and Services, 61 percent of the degrees awarded in Cuyahoga County were received by women compared with 49 percent nationally.

The overall share of degrees accounted for by these two fields was also greater in Cuyahoga County. These two fields combined accounted for 19 percent of all master's degrees received by women locally, compared with 8 percent of those received by women nationally.

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1. Note that in the last few years changes have occurred in master's programs offered at individual institutions which may have affected the kinds of degrees received by women. One major university has attempted to discontinue part-time master's programs while another major university has greatly expanded its offering of master's programs (including part-time programs). Note, too, that in 1970-71 one university awarded 69 percent of all master's degrees conferred in Cuyahoga County, compared with 50 percent in 1973-74.

Master's Degrees Conferred, United States, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	231,486	138,590	59.9%	92,896	40.1%	100.0%	100.0%
Area Studies	1,017	620	61.0%	397	39.0%	.4%	.4%
Biological Sciences	5,756	3,813	66.2%	1,943	33.8%	2.8%	2.1%
Business and Management	26,654	25,609	96.1%	1,045	3.9%	18.5%	1.1%
Communications	1,856	1,214	65.4%	642	34.6%	.9%	.7%
Computer and Information Sciences	1,588	1,424	89.7%	164	10.3%	1.0%	.2%
Education	89,067	39,047	43.8%	50,020	56.2%	28.2%	53.8%
Engineering	16,457	16,272	98.9%	185	1.1%	11.7%	.2%
Fine and Applied Arts	6,678	3,513	52.6%	3,165	47.4%	2.5%	3.4%
Foreign Languages	4,779	1,653	34.6%	3,126	65.4%	1.2%	3.4%
Health Professions	5,902	2,630	44.6%	3,272	55.4%	1.9%	3.5%
Home Economics	1,453	88	6.1%	1,365	93.9%	.1%	1.5%
Law	955	909	95.2%	46	4.8%	.6%	-
Letters	12,743	5,415	42.5%	7,328	57.5%	3.9%	7.9%
Library Science	7,028	1,315	18.7%	5,713	81.3%	.9%	6.1%
Mathematics	5,201	3,677	70.7%	1,524	29.3%	2.7%	1.6%
Physical Sciences	6,386	5,533	86.6%	853	13.4%	4.0%	.9%
Psychology	4,438	2,787	62.8%	1,651	37.2%	2.0%	1.8%
Public Affairs and Services	8,406	4,307	51.2%	4,099	48.8%	3.1%	4.4%
Social Sciences	16,522	11,812	71.5%	4,710	28.5%	8.5%	5.1%
All other	8,600	6,952	80.8%	1,648	19.2%	5.0%	1.8%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

Master's Degrees Awarded to Women,
Selected Fields, Cuyahoga County vs. United States, 1970-71

	United States			Cuyahoga County			
	Total Degrees Awarded	Degrees Awarded To Women	Percent	Total Degrees Awarded	Degrees Awarded To Women	Percent	Percent Diff.
Business and Management	26,654	1,045	3.9%	167	2	1.2%	- 2.7%
Education	89,067	50,020	56.2%	309	167	54.0%	- 2.2%
Engineering	16,457	185	1.1%	110	1	.9%	- .2%
Health Professions	5,902	3,272	55.4%	64	48	75.0%	+19.6%
Public Affairs and Services	8,406	4,099	48.8%	102	62	60.8%	+12.0%
Subtotal	146,486	58,621	40.0%	752	280	37.2%	- 2.8%
All other	85,000	34,275	40.3%	564	313	55.5%	+15.2%
Total, all master's degrees	231,486	92,896	40.1%	1,316	593	45.1%	+ 5.0%

Percent Distribution

	U.S.	Cuy. Co.	Difference
Business and Management	1.1%	.3%	- .8%
Education	53.8%	28.2%	-25.6%
Engineering	.2%	.2%	-
Health Professions	3.5%	8.1%	+ 4.6%
Public Affairs and Services	4.4%	10.5%	+ 6.1%
Subtotal	63.0%	47.3%	-15.7%
All other programs	37.0%	52.7%	+15.7%
Total, all master's degrees	100.0%	100.0%	

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

In Education, the percent of degrees received by women was about the same locally and nationally in 1970-71, but the overall share of degrees accounted for by Education was very different.

> Education accounted for 28 percent of all master's degrees received by women in Cuyahoga County, compared with 54 percent of all degrees received by women nationally.

(Note that by 1973-74 Education accounted for 42 percent of the master's degrees received by women in Cuyahoga County).

Other traditional 'female' fields, however, accounted for a much larger share of all master's degrees received by women in Cuyahoga County.

> Health Professions, Public Affairs and Services, Library Science, and Nutrition accounted for 42 percent of all degrees received by women in Cuyahoga County, compared with 14 percent of all degrees received by women nationally.

Note, too, that there was no real difference in the overall share of degrees accounted for by Business and Management and Engineering.

To summarize, there were only minor differences locally and nationally in the kinds of degrees women received. More than two-thirds of the master's degrees received by women locally and nationally were in traditional 'female' fields. We now shift focus to the actual number of master's degrees awarded to women relative to population.

Master's Degrees Awarded per 100,000 Inhabitants, 1970-71

	Total	Men	Women
Cuyahoga County	76.5	42.0	34.5
United States	111.3	66.6	44.7

Women in Cuyahoga County received 34.5 degrees per 100,000 people, compared with 44.7 per 100,000 (or 30 percent more) nationally. If women in Cuyahoga County had received degrees at the national rate, there would have been 768 degrees awarded to women, or 175 more than were actually awarded. Note that this difference is not as great as it was at the associate and bachelor's levels.

Once again, less people of either sex were being educated in Cuyahoga County. Men and women combined received 76.5 degrees per 100,000 people in Cuyahoga County, compared with 111.3 per 100,000 (or 45 percent more) nationally.[1]

1. One other institution in Cuyahoga County, the Cleveland Institute of Music, awarded master's degrees in 1970-71. A total of 16 degrees were awarded which does not significantly change the per capita rate for Cuyahoga County.

Doctoral Level

1973-74

Women received 43 doctor's degrees in 1973-74 or 20 percent of the 220 degrees awarded in Cuyahoga County. Note that at the doctoral level women received a much lower percent of total degrees awarded than at the associate, bachelor's, and master's levels. The degrees received by women were distributed among a wider variety of disciplines at the doctoral level than they were at other degree levels.

Nevertheless, more than half of the degrees received by women were in three fields.

> Biology, Education, and Letters accounted for 51 percent of all doctor's degrees awarded to women, compared with 14 percent of all degrees awarded to men.
>
> Almost half of the Biology degrees received by women were in Nutrition, while none of the degrees received by men were in this field.

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Biology	22	13	59.1%	9	40.9%	7.3%	20.9%
Nutrition	4	0	0.0%	4	100.0%	0.0%	9.3%
All other	18	13	72.2%	5	27.8%	7.3%	11.6%
Education	12	4	33.3%	8	66.7%	2.3%	18.6%
Letters	12	7	58.3%	5	41.7%	4.0%	11.6%
Subtotal	46	24	52.2%	22	47.8%	13.6%	51.2%
All other fields	174	153	87,9%	21	12.1%	86.4%	48.8%
Total, all fields	220	177	80.5%	43	19.5%	100.0%	100.0%

Doctor's Degrees Conferred, Cuyahoga County, 1973-74

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	220	177	80.5%	43	19.5%	100.0%	100.0%
Area Studies	3	2	66.7%	1	33.3%	1.1%	2.3%
Biology	22	13	59.1%	9	40.9%	7.3%	20.9%
Nutrition	4	0	0.0%	4	100.0%	0.0%	9.3%
Business & Management	14	13	92.9%	1	7.1%	7.3%	2.3%
Computer & Information Sciences	14	13	92,9%	1	7.1%	7.3%	2.3%
Education	12	4	33.3%	8	66.7%	2.3%	18.6%
Engineering	48	46	95.8%	2	4.2%	26.0%	4.7%
Fine & Applied Arts	4	3	75.0%	1	25.0%	1.7%	2.3%
Foreign Languages	3	1	33.3%	2	66.7%	.6%	4.7%
Health Professions	4	3	75.0%	1	25.0%	1.7%	2.3%
Letters	12	7	58.3%	5	41.7%	4.0%	11.6%
Library Science	7	6	85.7%	1	14.3%	3.4%	2.3%
Mathematics	6	3	50.0%	3	50.0%	1.7%	7.0%
Physical Sciences	32	32	100.0%	0	0.0%	18.1%	0.0%
Psychology	14	11	78.6%	3	21.4%	6.2%	7.0%
Public Affairs & Services	6	5	83.3%	1	16.7%	2.8%	2.3%
Social Sciences	18	14	77.8%	4	22.2%	7.9%	9.3%
Interdisciplinary Studies	1	1	100.0%	0	0.0%	.6%	0.0%

Note: Columns may not add to totals due to rounding.

Prepared by L. Zell, Clearinghouse for Research and Employment, Institute of Urban Studies, Cleveland State University.

Engineering, Physical Sciences, Business and Management, and Computer Sciences accounted for 59 percent of all doctor's degrees received by men, compared with 9 percent of all degrees received by women.

Out of the 104 degrees awarded in these four fields, only 4 degrees were awarded to women (or 4 percent of the total).

	Degrees Awarded					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Business and Management	14	13	92.9%	1	7.1%	7.3%	2.3%
Computer and Information Sciences	14	13	92.9%	1	7.1%	7.3%	2.3%
Engineering	48	46	95.8%	2	4.2%	26.0%	4.7%
Physical Sciences	32	32	100.0%	0	0.0%	18.1%	0.0%
Subtotal	108	104	96.3%	4	3.7%	58.8%	9.3%
All other fields	112	73	65.2%	39	34.8%	41.2%	90.7%
Total, all Ph.d's	220	177	80.5%	43	19.5%	100.0%	100.0%

In general, there were no fields of study which were predominately female at the doctoral level, in contrast to the situation for baccelarreate and master's degrees. It seems that men 'took over' women's fields at the highest degree level.

One example is the field of Public Affairs and Services (Social Work). In 1973-74 women received 73 percent of the bachelor's degrees awarded, 65 percent of the master's degrees awarded, and only 17 percent of the doctor's degrees awarded in this field.

1970-71 vs. 1973-74

There was a tremendous drop from 1970-71 to 1973-74 in the total number of doctor's degrees awarded (from 327 to 220), while the number of degrees awarded to women dropped much less (from 51 to 43). As a result, the percent of all doctor's degrees awarded to women rose from 16 percent to 20 percent.

It is difficult to generalize or spot trends at the doctoral level because the number of degrees received by women was so small. It seems, however, that the only major change that occurred in this three-year period took place in Biology. The number of degrees awarded to women in Biology more than doubled from 4 to 9 degrees, with 4 of the 5 additional degrees in the field of Nutrition.

The total number of degrees awarded in Education dropped from 28 to 12, while the number of Education degrees awarded to women dropped by only 3 (from 11 to 8). As a result, the percent of Education degrees awarded to women rose from 39 percent to 67 percent. The overall share of degrees accounted for by Education dropped (from 22 percent of all degrees received by women to 19 percent).

The number of degrees received by women in Engineering rose from zero to 2. In Business and Management the number of degrees received by women remained constant (1), while the number of degrees received by women in Physical Sciences dropped (from 2 to 0).

To summarize, there were no great changes in the numbers of degrees awarded to women, especially in traditional 'male' fields.

Ph.D's Conferred, Cuyahoga County, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	327	276	84.4%	51	15.6%	100.0%	100.0%
Area Studies	4	4	100.0%	0	0.0%	1.4%	0.0%
Biological Sciences	24	20	83.3%	4	16.7%	7.2%	7.8%
Business and Management	11	10	90.9%	1	9.1%	3.6%	2.0%
Computer and Information Sciences	6	6	100.0%	0	0.0%	2.2%	0.0%
Education	28	17	60.7%	11	39.3%	6.2%	21.6%
Engineering	56	56	100.0%	0	0.0%	20.3%	0.0%
Fine and Applied Arts	4	3	75.0%	1	25.0%	1.1%	2.0%
Foreign Languages	18	8	44.4%	10	55.6%	2.9%	19.6%
Letters	27	19	70.4%	8	29.6%	6.9%	15.7%
Library Science	2	0	0.0%	2	100.0%	0.0%	3.9%
Mathematics	16	15	93.8%	1	6.2%	5.4%	2.0%
Physical Sciences	89	87	97.8%	2	2.2%	31.5%	3.9%
Psychology	14	8	57.1%	6	42.9%	2.9%	11.8%
Public Affairs and Services	7	5	71.4%	2	28.6%	1.8%	3.9%
Social Sciences	21	18	85.7%	3	14.3%	6.5%	5.9%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

National Comparison

Women in Cuyahoga County received a slightly higher percent of all degrees conferred than did women nationally (16 percent vs. 14 percent).

The only significant difference between Cleveland and the nation in the kinds of degrees received by women was in the field of Education.

> Women received 39 percent of all Education degrees awarded in Cuyahoga County, compared with 21 percent of those awarded nationally.

However, Education degrees accounted for only 22 percent of all doctor's degrees received by women in Cuyahoga County, compared with 30 percent of all degrees received by women nationally. Once again, Education was more of a female field in Cuyahoga County but accounted for a smaller share of all degrees received by women than was the case nationally.

Ph.D's Conferred, United States, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	32,113	27,534	85.7%	4,579	14.3%	100.0%	100.0%
Area Studies	149	123	82.6%	26	17.4%	.4%	.6%
Biological Sciences	3,645	3,050	83.7%	595	16.3%	11.1%	13.0%
Business and Management	810	787	97.2%	23	2.8%	2.9%	.5%
Communications	145	126	86.9%	19	13.1%	.5%	.4%
Computer and Information Sciences	128	125	97.7%	3	2.3%	.5%	.1%
Education	6,398	5,043	78.8%	1,355	21.2%	18.3%	29.6%
Engineering	3,638	3,615	99.4%	23	.6%	13.1%	.5%
Fine and Applied Arts	621	483	77.8%	138	22.2%	1.8%	3.0%
Foreign Languages	781	484	62.0%	297	38.0%	1.8%	6.5%
Health Professions	466	389	83.5%	77	16.5%	1.4%	1.7%
Home Economics	123	48	39.0%	75	61.0%	.2%	1.6%
Interdisciplinary Studies	91	77	84.6%	14	15.4%	.3%	.3%
Letters	2,416	1,849	76.5%	567	23.5%	6.7%	12.4%
Library Science	39	28	71.8%	11	28.2%	.1%	.2%
Mathematics	1,199	1,106	92.2%	93	7.8%	4.0%	2.0%
Physical Sciences	4,391	4,145	94.4%	246		15.1%	5.4%
Psychology	1,782	1,355	76.0%	427	24.0%	4.9%	9.3%
Public Affairs and Services	178	135	75.8%	43	24.2%	.5%	.9%
Social Sciences	3,659	3,152	86.1%	507	13.9%	11.4%	11.1%
All other	1,454	1,414	97.2%	40	2.8%	5.1%	.9%

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

Ph.D's Awarded to Women, Selected Fields, Cuyahoga County vs. United States, 1970-71

	United States			Cuyahoga County			
	Total Degrees Awarded	Degrees Awarded To Women	Percent	Total Degrees Awarded	Degrees Awarded To Women	Percent	Percent Diff.
Business and Management	810	23	2.8%	11	1	9.1%	+ 6.3%
Education	6,398	1,355	21.2%	28	11	39.3%	+18.1%
Engineering	3,638	23	.6%	56	0	0.0%	- .6%
Public Affairs and Services	178	43	24.2%	7	2	28.6%	+ 4.4%
Subtotal	11,024	1,444	13.1%	102	14	13.7%	+ .6%
All other	21,089	3,135	14.9%	225	37	16.4%	+ 1.5%
Total, all doctor's degrees	32,113	4,579	14.3%	327	51	15.6%	+ 1.3%

Percent Distribution

	U.S.	Cuy. Co.	Difference
Business and Management	.5%	2.0%	+ 1.5%
Education	29.6%	21.6%	- 8.0%
Engineering	.5%	0.0%	- .5%
Public Affairs and Services	.9%	3.9%	+ 3.0%
Subtotal	31.5%	27.5%	- 4.0%
All other programs	68.5%	72.5%	+ 4.0%
Total, all doctor's degrees	100.0%	100.0%	-

Note: Columns may not add to totals due to rounding.

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

We will now examine the actual number of degrees awarded relative to population. Women in Cuyahoga County received 3 doctor's degrees for every 100,000 people, a figure that is slightly higher than the national average of 2.2 per 100,000. Note that this is quite different than was the case at lower degree levels where Cleveland was far below the national per capita figure.

Ph.D's Awarded per 100,000 Inhabitants, 1970-71

	Total	Men	Women
Cuyahoga County	19.0	16.0	3.0
United States	15.4	13.2	2.2

In fact, there was a larger number of people of both sexes being educated at the doctoral level in Cuyahoga County. Men and women in Cuyahoga County received 19 degrees per 100,000 people, compared with 15.4 per 100,000 nationally. (Note that by 1973-74, however, the figure for Cuyahoga County had dropped to 12.8 degrees per 100,000 people).

It is not surprising that Cleveland was above the national per capita average for doctor's degrees awarded. Any area that has a major university offering doctoral programs will tend to be above the national average because there are fewer doctoral programs available nationally than there are undergraduate and master's programs. (For example, 67 colleges and universities in Ohio awarded bachelor's degrees in 1970-71, but only 10 awarded doctor's degrees).

The fact that doctoral programs are available in Cleveland does not necessarily mean that Cuyahoga County residents are receiving doctor's degrees at higher than average rates. We would expect that a much higher percentage of persons receiving doctor's degrees in Cleveland are from out-of-state than is the case at the undergraduate and master's level.

Note, too, that people receiving doctor's degrees are trained for the national labor market. In contrast, bachelor's and master's degrees are more likely to be used by local residents for employment in the local labor market. We expect, then, that people in doctoral programs were likely to be non-residents and were likely to leave the state eventually for employment. Large doctoral programs, therefore, will not have a great effect on the local labor market.

First Professional Degrees

1973-74

Women received 69 first professional degrees in 1973-74, or 12 percent of the 594 degrees awarded in Cuyahoga County.

First Professional Degrees Conferred, Cuyahoga County, 1973-74

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	594	525	88.4%	69	11.6%	100.0%	100.0%
Dentistry	83	83	100.0%	0	0.0%	15.8%	0.0%
Medicine	121	105	86.8%	16	13.2%	20.0%	23.2%
Law	390	337	86.4%	53	13.6%	64.2%	76.8%

Prepared by L. Zell, Clearinghouse for Research on Women and Employment, Institute of Urban Studies, Cleveland State University.

Law degrees accounted for more than three-quarters or 77 percent of all first professional degrees awarded to women (vs. 64 percent of all degrees awarded to men). Women received 14 percent of all law degrees conferred. Roughly the same percent of all medical degrees awarded went to women (13 percent) and these accounted for 23 percent of all first professional degrees awarded to women in the Cleveland area (vs. 20 percent of all degrees awarded to men).

The biggest difference between men and women was in the field of Dentistry. Women did not receive a single degree in Dentistry, while Dentistry accounted for 16 percent of all first professional degrees awarded to men.

It is true that women received a smaller percent of total degrees awarded at the first professional level than women received at any other degree level. However, women received a higher percent of first professional degrees than they received of degrees awarded in any other traditional 'male' field (e.g., Business and Management, Engineering). We understand that the medical school and both law schools have made special efforts in the last few years to recruit and accept more women, and it would seem that these efforts have already been reflected in numbers of degrees granted.[1]

1970-71 vs. 1973-74

The number of first professional degrees awarded to women almost doubled, rising from 38 to 69 degrees over the last three years. At the same time, there was a massive increase in total degrees awarded, and consequently the percent of all degrees awarded to women rose only from 10 to 12 percent.

The number of Law degrees awarded to women rose by 31 (from 22 to 53 degrees), accounting for all of the increase in first professional degrees awarded to women. The percent of Law degrees awarded to women increased (from 10 to 14 percent) as did the overall share of degrees accounted for by Law (from 58 percent of all degrees received by women to 77 percent).

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1. Note that women make up 25 percent of the first year class at CSU Marshall Law School and 38 percent of the first year class at CWRU Law School for 1974-75. Of the first year students at the medical school in 1974-75, 26 percent are women. It seems that tremendous advances in providing more equal educational opportunities have been made at these schools in the last few years.

First Professional Degrees Conferred, Cuyahoga County, 1970-71

	Degrees Conferred					Percent Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	389	351	90.2%	38	9.8%	100.0%	100.0%
Dentistry	69	66	95.7%	3	4.3%	18.8%	7.9%
Medicine	95	82	86.3%	13	13.7%	23.4%	34.2%
Law	225	203	90.2%	22	9.8%	57.8%	57.9%

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

By contrast, no great changes occurred in the fields of Dentistry and Medicine during this three-year period. In Dentistry, the number of degrees received by women dropped from 3 to 0. In Medicine the number of degrees received by women rose by 3 (from 13 to 16), while the percent of medical degrees awarded to women remained more or less constant.

In summary, there was great progress in the field of Law, no real change in Medicine, and a small step backwards in Dentistry.

1. Note that two additional institutions awarded first professional degrees in Cuyahoga County in 1970-71. The Ohio College of Podiatric Medicine and St. Mary Seminary awarded a total of 98 first professional degrees, raising the total per capita figure for Cuyahoga County to 28.3 degrees per 100,000 inhabitants. Only 3 of these degrees were awarded to women.

National Comparison

In 1970-71 women received a somewhat larger-than-average share of all first professional degrees conferred in Cuyahoga County (10 percent vs. 7 percent nationally). In fact, this was true for all three specialty areas.

In Dentistry, women received 4 percent of the degrees awarded in Cuyahoga County (vs. 1 percent nationally). (Note that by 1973-74, however, women in Cuyahoga County did not receive any degrees in this field).

Women in Cuyahoga County received 14 percent of all medical degrees awarded (vs. 9 percent nationally).

Women in Cuyahoga County received 10 percent of the Law degrees awarded (vs. 7 percent nationally).

First Professional Degrees Conferred, United States, 1970-71

	Degrees Conferred					Distribution	
		Men		Women			
	Total	Number	Percent	Number	Percent	Men	Women
Total	38,276	35,797	93.5%	2,479	6.5%	100.0%	100.0%
Dentistry	3,777	3,731	98.8%	46	1.2%	10.4%	1.9%
Medicine	8,986	8,157	90.8%	829	9.2%	22.8%	33.4%
Law	17,652	16,359	92.7%	1,293	7.3%	45.7%	52.2%
All other	7,861	7,550	96.0%	311	4.0%	21.1%	12.5%

Source: Earned Degrees Conferred: 1970-71, U.S. Department of Health, Education, and Welfare.

We turn now to the number of first professional degrees awarded to women relative to population. Once again, the per capita figures for Cuyahoga County are higher than the national average. In part this is because there are relatively few professional schools in the nation, and any area with professional schools would be above the national average. We would expect that a high percentage of the degrees awarded were received by out-of-state residents, and that most of the people receiving first professional degrees in Cuyahoga County will leave the area for employment. Therefore, the high per capita figure does not necessarily indicate that local residents are receiving first professional degrees at above average rates.

First Professional Degrees Conferred per 100,000 Inhabitants, 1970-71

	United States			Cuyahoga County		
	Total	Men	Women	Total	Men	Women
Total	18.4	17.2	1.2	22.6	20.4	2.2
Dentistry	1.8	1.8	-	4.0	3.8	.2
Medicine	4.3	3.9	.4	5.5	4.8	.7
Law	8.5	7.9	.6	13.1	11.8	1.3

Conclusions and Implications

The preceding survey shows that most women receiving degrees from institutions of higher education in Cuyahoga County have been trained in fields of specialization that have been traditionally dominated by females. Women have been far less likely than men to train for positions which lead to promotions and higher-than-average salaries. Very few women have received degrees that would prepare them for careers in traditional male fields. Finally, except at the professional and doctoral level, the number of degrees granted in Cuyahoga County both to men and women has been far below the national average relative to population.

If Equal Employment laws are effective and continue to be enforced in the years ahead, the result could be a substantial increase in the demand for trained women in many occupations traditionally held by males. The potential demand for women appears to be large in some fields (e.g. Business Administration or Engineering), yet women are not receiving the training they need for employment in these fields. For example, in 1973-74:

Women received only 4 of the 390 bachelor's degrees awarded in Engineering in Cuyahoga County.

Women received 84, or 10 percent of the 823 bachelor's degrees awarded in Business and Management.

Women received only 12,or 6 percent of the 192 master's degrees awarded in Business and Management.

The relative absence of women in education and training programs leading to male occupations appears to be true not only in higher education, but in other types of post-secondary education and training as well.

> In a recent study of the enrollment of mature women (over age 35) in 28 business, trade, and technical schools in Cuyahoga County, Janice Patterson found that mature women accounted for 121 out of 4,976 persons enrolled in 1973-74, or only two percent of the total.
>
> Seventy-four of these women were in training for clerical occupations. Thirty were enrolled in a short course on income tax preparation. Thirteen were receiving training in dressmaking or in skills associated with the garment industry, and three were in health services fields.
>
> Only one woman over 35 was training for an occupation not traditionally dominated by women (quality control technician).

We do not yet have adequate information about the participation of women in manpower programs, in vocational programs at high schools, or in the network of new vocational training programs sponsored by the State. At this point, however, there is little reason to believe that there are more than a few women preparing for traditional male fields at any level of postsecondary education or training.

If specific kinds of education and training are principle requirements for entry into many of the high-income and high-status occupations traditionally held by men, and if women are not receiving this kind of education or training, existing social problems will only be perpetuated. It will also create major new problems for the community.

> The lack of trained women for many occupations will present major problems for employers who seek qualified applicants in order to fulfill affirmative action requirements imposed on them by the courts.
>
> The lack of trained women will similarly create problems for firms which are voluntarily attempting to implement equal employment opportunity.
>
> Needless to say, the lack of training also creates problems for women who are trying for economic and social equality.

Factors that Might Account for Women's Low Participation

What we see here is a potential mis-match between the community's post-secondary education system and the needs of both the labor market and society as a whole.

Why has there been so little participation by women in traditionally male fields of higher education?

Is it that women generally have not wanted to become managers or engineers or systems analysts and have not sought the increased responsibility and higher salaries typical of many positions held by men?

Or does the low rate of participation of women in specialized educational and training programs dominated by men indicate that barriers of some kind have existed, barriers that have restricted women in career choices and prevented them from achieving full equality of opportunity?

If barriers have in fact limited or impeded women's participation in higher education, then it would be important to identify these barriers in order to plan new educational programs and take other steps to remove them or assist women to overcome them. At this point, we can only guess at the nature of these barriers, but there are a number of likely possibilities.

1. Perceived shortages of jobs for women in occupations traditionally dominated by males.

Actual or perceived shortages of jobs for women may discourage women from investigating opportunities in "male" fields and induce them to prepare for "female" occupations where employment appears to be more certain, even though wages and promotion opportunities in these fields are known to be inferior. With the continued enforcement of equal opportunity laws, actual shortages of better paying jobs for women many become less severe. There may be a lag, however, between changes in labor market conditions and the time that these changes are perceived by substantial numbers of women. Perceived shortages may result from poor communication between employers, schools, and the community.

2. Low career aspirations in adult women, resulting from early socialization of females beginning in childhood.

From an early age female children learn that careers are inappropriate for women and irrelevant to female roles. For example, beginning in elementary school, textbooks show women primarily as 'mommies' with a few teachers and nurses thrown in for variety. The media present women in stereotyped ways. With few role models, girls learn that careers are not considered important for women in the first place, and that if women must work, only a small number of occupations are appropriate. Consequently, girls grow up with a narrow horizon of career alternatives.

3. Social pressures against women who seek or achieve success in non-traditional female roles.

Women are expected to be good wives and mothers, but not good executives. A woman who aspires to be an engineer, for example, may be ridiculed and ostracized by women as well as men. Her femininity may be questioned, and she may be lead to feel that she is cutting herself off from opportunities for fulfillment in other non-job-related areas of her life, and from marriage in particular.

These pressures may exert more influence on the young college woman than on the mature woman who returns to college after raising a family and/or working for a number of years. The mature woman would presumably have a stronger sense of her own identity and would be less concerned about other people's opinions.

4. Demands from women's traditional role which limit the time and energy available for both training and employment.

Women who are still primarily responsible for children and housework may choose occupations that have built-in mobility and permit part-time or occasional employment (e.g., nursing, teaching, sales work) rather than those that demand regular hours, overtime, travelling away from home, or assignments to other cities (e.g., engineer, business executive). For women with children and/or household responsibilities, in particular, part-time college attendance while holding a job may be impossible.

5. Reluctance on the part of mature women to enter fields that require years of education or job-related experience for promotion.

Women over 30 returning to the labor force may avoid careers that involve long periods of on-the-job training or apprenticeship (and may not even be considered for trainee positions by employers). Similarly, they may wish to avoid occupations with long career ladders, where rewards come only after years of service and promotion within a single company. Instead, many women may opt for careers that begin immediately after graduation (e.g., nursing), even though opportunities for promotion are limited.

6. The "superwoman syndrome."

The first women in an engineering program, for example, may be expected to perform better than the average male student to 'prove' that women can be engineers. This pressure to excel may discourage all but the most outstanding women. It seems that this situation will change only as more women enter 'male' programs and as men learn to accept the fact that women of average abilities can succeed (in a career) as well as men with the same capabilities.

7. Specific situational barriers which make it difficult for career-minded women to attend college.

Lack of day care facilities may prevent many women from attending school during the day, and safety considerations may prevent them from attending night classes. Single mothers who work during the day may not be able to afford child care during both work and classes or may not wish to leave their children parentless both day and night.

8. Sex-stereotyping of educational and training programs, which may discourage women from participating in these programs.

Some educational and training programs, which have been attended solely by male students in previous years, may have developed built-in male "images" which female students find offensive, or may require types of behavior reflecting masculinity rather than job performance. This has often been true of trade school training programs (e.g., for truck drivers) and for many apprenticeship programs in the building trades. It may also have occurred in some engineering and business administration programs, just as a reverse type of stereotyping offensive to some males may have occurred in courses in education, nursing, and in subjects related to the fashion industry. To the extent that educational programs require sex-stereotyped behavior, this may explain part of the reluctance of females to enroll in male-oriented educational programs (and vice versa).

The Need for Further Research

The previous section has discussed a number of possible reasons for women's low participation in traditionally 'male' fields of higher education. Unfortunately, we have no way at present of determining which of these possible factors have been responsible for the low levels of participation we have observed.

Furthermore, it is probable that the importance of these factors may differ for different groups of women. Barriers may have far more effect on some socio-economic groups of women than on others. (For example, we have been told that Cuyahoga Community College has had far more success in recruiting women from the eastern suburbs than from other parts of the county).

One main conclusion, therefore, is that further research is needed to identify factors that have prevented women from seeking more education and entering new fields. Better information on the reasons for low participation by women in traditional male fields is imperative if these barriers are to be overcome. It is possible that women do not know about the educational and employment opportunities available to them, and that the main need is for better information. Alternatively, the real need may be for training programs designed specifically for women, or for better counselling, or for steps to remove specific barriers that have prevented women from training themselves in new careers. Employers, employment agencies, counsellors, and manpower (perhaps people-power is more appropriate) planning agencies, as well as colleges and universities need a clearer understanding of these

barriers in order to design effective programs to reduce or eliminate these barriers and make full equality of opportunity a reality. The need for an organized and planned approach to the problems encountered by women in higher education should be clear; change does not seem to be occurring by itself.

Some Suggestions for Further Research

1. The first need is for an annual survey or inventory of enrollments by women and other minorities by type of program, for colleges, universities, "manpower" programs, proprietary trade schools,... in short, for all kinds of vocational education and training available in the Cleveland area.

2. What efforts are being made to recruit larger numbers of women into traditionally 'male' programs of study at local colleges and universities, and how successful have these efforts been?

3. What attitudes toward women are held by faculty and administrators in traditionally 'male' programs at local colleges and universities? Are they aware of increased demands for women in previously 'male' occupations?

4. How did women in traditionally 'male' and 'female' fields at the college level choose their program of study? How many alternatives were they aware of at the time of their choice?

5. What has been the experience of women who have recently enrolled in educational programs leading to careers traditionally dominated by men? Have they experienced specific difficulties because of their sex? Are drop-out rates greater for women then for men in such programs? Are there specific steps that could be taken to improve educational opportunities for women?

6. What can we learn from the experience of counselling agencies who have worked with large numbers of women considering new careers? What barriers to further education are frequently encountered by the clients of these agencies, and what steps might be taken to reduce these barriers?

7. How accurate is the information available to vocational counselling and career education programs about educational and career opportunities for women? How effective are these counselling programs?

8. What perceptions concerning educational and career opportunities are held by women in the community? How accurate are these perceptions, and how might they be changed?

9. Does the employed woman face particular difficulties in pursuing further education and training? Are employed women aware of programs offered by local colleges and universities? Are there methods which might improve access to further education for the working woman?